

MATH 181 CALCULUS I WORKSHEET 6 1/2

Find  $\frac{dy}{dx}$  (find the derivative with respect to  $x$ ) of each of the following using *any technique* you wish to use (that is correct, one hopes)!

1.  $y = 5 \cdot \sec(x) \cdot 2^{(x-1)}$

2.  $y = 5^x \cdot \tan(x) \cdot e^{(x)}$

3.  $y = \sin(x) \cdot \csc(x)$

4.  $y = 7x \cdot \ln(x^2)$

5.  $y = 7^x \cdot \ln(x^7)$

6.  $y = \ln(e^{2x})$

7.  $y = (x)^{(5x+1)}$

8.  $y = (\sin(x))^{\ln(x)}$

9.  $y = (\ln(x))^{\sin(x)}$

10.  $y = \log_5(x) \cdot \sqrt[4]{x^7 + 1}$

11.  $(x + y)^2 = 4x^2y^2$

12.  $3x^2 + 16y^2 = 48$

13.  $3x^2 - 16y^2 = 48$

14.  $3x^2 - 9x + 16y^2 + 64y = 400$

15.  $x^2y = \cos(x^2y)$

16.  $xy^2 = \cos(x^2y)$

17.  $y = \frac{\cos(x) + 4}{\tan(x)}$